

**In the Specification**

Please delete the paragraph beginning on page 9, line 5, and shown below:

~~FIG. 17—this figure number has not been used in the application;~~

Please replace the paragraph beginning on page 9, line 7 with the following amended paragraph:

FIGS. ~~18-21~~ 17-20 are various views showing various details of the suturing instrument's wire drive assembly;

Please replace the paragraph beginning on page 9, line 10 with the following amended paragraph:

FIGS. ~~22-25~~ 21-24 are various views showing various details of the suturing instrument's wire supply cartridge;

Please replace the paragraph beginning on page 9, line 13 with the following amended paragraph:

FIGS. ~~26-33~~ 25-32 show various steps in a suturing operation conducted with the suturing instrument;

Please delete the paragraph beginning on page 9, line 15, and shown below:

~~FIG. 34—this figure number has not been used in the application; and~~

Please replace the paragraph beginning on page 9, line 17 with the following amended paragraph:

FIGS. ~~35-37~~ 33-35 are schematic side views illustrating the interrelationship between the geometry of the cannula assembly's end effector portion and the leading tip of the suture wire.

Please replace the paragraph beginning on page 14, line 8 with the following amended paragraph:

End effector 204 is configured so as to form a modified suture loop 422 204, sometimes referred to as a suture clip or a "B-form loop" or a "B-form clip", as will hereinafter be discussed.

Please replace the paragraph beginning on page 16, line 12 with the following amended paragraph:

The distal end of cutting bar 246 (FIGS. 14-16) preferably comprises a plurality of distinct faces, i.e., a cutting face 248 defining a cutting edge 250, a relief face 252 set at an angle  $\alpha$  to cutting face 248, an ejection ramp face 254, and an ejection push face 258. As will hereinafter be discussed in further detail, when cutting bar 246 is driven distally so as to encounter suture wire extending between second channel 228 and third channel 230 (and hence across cutting bar channel 232), cutting edge 250 will sever the suture wire, ejection ramp face 254 will lift the trailing end of the severed suture wire out of cutting bar channel 232 and up over islands 237a and 237b ~~236~~ so that the loop may be released from the distal end of the suturing instrument, and ejection push face 258 will push the suture loop free from the distal end of suturing instrument 2.

Please replace the paragraph beginning on page 18, line 17 with the following amended paragraph:

FIGS. 11I, 11J, and 11K illustrate further details regarding an alternative end effector 204.

Please replace the paragraph beginning on page 19, line 2 with the following amended paragraph:

Looking next at FIGS. 4, 5 and ~~18-21~~ 17-20, wire drive assembly 300 comprises a fixed block 302, a movable block 304, a first drive shaft roller 306 connected to a spur gear 308 via an axle 310 passing through fixed block 302 and a one way clutch 312, and a second drive shaft roller 314 connected to a spur gear 316 via an axle 318 and a one way clutch 320. A pair of capture blocks 322 and 324 rotatably capture drive shaft rollers 306 and 314 to blocks 302 and 304, respectively.

Please replace the paragraph beginning on page 20, line 6 with the following amended paragraph:

However, depressing lever 336 will cause cam follower 338 to pivot, whereby to force movable block 304 away from fixed block 302 and whereby to separate roller 314 from roller 306 (and to separate spur gear 316 from ~~spur gear 308~~ rack teeth 118). Wire supply cartridge 400 may then be inserted between rollers 314 and 306 and, by then restoring lever 336 to its inboard position, cause the suture wire to be gripped by rollers 306 and 314, whereupon the suture wire may be driven by rollers 306 and 314 out the distal end of the suturing instrument.

Please replace the paragraph beginning on page 22, line 5 with the following amended paragraph:

At the completion of the stroke, lever 104 is released, thereby allowing the aforementioned parts to return to their starting position under the influence of spring 116. However, one way clutches 312 and 320 (FIG. ~~49~~18) interposed between drive rollers 306 and 314, and the drive rollers 306 and 314, respectively, prevent reverse movement of the drive rollers, thereby preventing any retraction of the suture wire.

Please replace the paragraph beginning on page 24, line 2 with the following amended paragraph:

Looking next at FIGS. ~~22-25~~21-24, wire supply cartridge 400 generally comprises a spool housing 402, a wire spool 404, a spool retainer spring 406, a spool ~~cover~~ retainer clip 408, a molded tube support 410 and a wire support tube 412. A length of suture wire 416 extends from spool 404 and through molded tube support 410 and wire support tube 412.

Please replace the paragraph beginning on page 27, line 8 with the following amended paragraph:

By way of example but not limitation, and looking now at FIGS. 13 and 26-33 ~~25-32~~, suturing instrument 2 may be used to suture together two portions 500, 502 of a subject which is to be sutured. In a typical case, portions 500, 502 might comprise two sections of severed tissue which need to be re-attached to one another, or two pieces of previously unattached tissue which need to be attached to one another. However, one or the other of the portions 500, 502 might also

comprise artificial mesh or some other object which is to be attached to tissue, etc. In addition, in a typical case, portions 500, 502 might be located relatively deep within a patient, and might be accessed during an endoscopic or a so-called "minimally invasive" or a so-called "closed surgery", procedure; however, in other circumstances, portions 500, 502 might be accessed during a conventional, or so-called "open surgery", procedure. This latter situation might include procedures done at the outer surface of the patient's body, i.e., where portions 500, 502 comprise surface elements.

Please replace the paragraph beginning on page 29, line 9 with the following amended paragraph:

When suturing instrument 2 is to apply a suture loop 422 to a subject, the distal end of the suturing instrument is positioned against the subject, e.g., it is positioned against portions 500, 502 (FIG. ~~40~~ 13).

Please replace the paragraph beginning on page 29, line 13 with the following amended paragraph:

End effector 204 is placed against the two pieces of tissue so that channels 230, 233 contact, or substantially contact, the material to be joined, with channel 230 facing one piece of material (e.g., tissue 500) and channel 233 facing the second piece of material (e.g., tissue 502). If desired, end effector 204 may be provided with one or more pins 280 (FIG. ~~44~~ 12) extending distally from its distal end; pins 280 can help stabilize the suturing tool against the tissue. In addition, pins 280 can hold a prosthesis (e.g., herein mesh) taut against the tissue as the suture wire penetrates it.

Please replace the paragraph beginning on page 30, line 4 with the following amended paragraph:

Next, as shown in FIGS. ~~26~~ 25 and ~~27~~ 26, suture wire is advanced out of wire guide 412, along channel 228, across cutting bar passageway 232, along channel 230, and then out of the tool. Due to the curved geometry of channel 230, the suture wire emerging from end effector 204 will take on a set, causing it to curl in a loop fashion, whereby the suture wire will pass through

the material to be sutured and then back into channel 233, in the manner shown in FIGS. ~~28~~ 27 and ~~29~~ 28.

Please replace the paragraph beginning on page 30, line 13 with the following amended paragraph:

If desired, channel 233 can act as a sort of deflecting anvil to receive and redirect the wire received from channel 235. In such cases, channel 233 actually helps form loop 422. However, in accordance with the present invention, it is not necessary for channel 233 to act as a deflecting anvil for wire, since the curvature of loop ~~233~~ 422 can be imparted solely by the geometry of channel 230 if desired.

Please replace the paragraph beginning on page 31, line 1 with the following amended paragraph:

Suture wire is advanced a predetermined amount, i.e., exactly the right amount to form the desired loop construct. In other words, where a "B-form loop" ~~432~~ 422 is being formed, suture wire is advanced until the leading end of the suture wire passes across cutting bar passageway 232 and encounters the trailing portion of the suture wire at the point where the suture wire crosses cutting bar passageway 232, which causes the leading tip 285 (FIGS. ~~28~~ and ~~29~~ 27 and 28) of the suture wire to be deflected distally into the relieved region 234. At this point the advancement of suture wire is stopped.

Please replace the paragraph beginning on page 31, line 13 with the following amended paragraph:

Next, cutting bar 246 is moved distally. This causes the cutting bar to (i) first encounter, and sever, the proximal most portion 290 of the suture wire extending across cutting bar passageway 232 (FIG. 10), whereby to separate loop 422 from the remainder of the suture wire carried by the suturing tool, and (ii) then drive against the two ends 285, 290 of loop 422 whereby, with the assistance of islands 237A and 237B, respectively, to bend the ends 285 and 290 toward the material being jointed (FIGS. ~~31~~ and ~~32~~ 30 and 31).

Please replace the paragraph beginning on page 33, line 5 with the following amended paragraph:

If desired, loop 422 can be used to secure mesh 295 (FIG. ~~33~~ 32) to tissue, or to attach other objects to tissue, or to attach objects other than tissue together, etc. In this respect it should be appreciated that where the suturing instrument is to be used to secure mesh to tissue, and where end effector 204 is provided with one or more distal stabilizing pins 280 (FIG. 12), pins 280 are preferably formed long enough to extend completely through the mesh and contact the underlying tissue.

Please replace the paragraph beginning on page 35, line 17 with the following amended paragraph:

If desired, loop 422 can be used to secure mesh 295 ~~502~~ (FIG. ~~33~~ 32) to tissue ~~500~~, or to attach other objects to tissue, or to attach objects other than tissue together, etc. In this respect it should be appreciated that where the suturing instrument is to be used to secure mesh to tissue, and where end effector 204 is provided with one or more distal stabilizing pins 280 (FIG. ~~42~~ 32), pins 280 are preferably formed long enough to extend completely through the mesh and contact the underlying tissue.

Please replace the paragraph beginning on page 36, line 7 with the following amended paragraph:

As noted above, channels 228 and 230 are positioned on opposing sides of cutting bar channel 232, whereby a length of suture wire 416, extending between channels 228 and 230, may be severed by cutting bar 246. In this respect it will be appreciated that the angle at which cutting bar channel 232 intersects channel 228 has a bearing on the angle imparted to the leading tip 424 of suture wire 416. More particularly, in FIG. ~~35~~33 it will be seen that cutting bar channel 232 intersects second channel 228 at the angle  $\theta$ ; as a result, the leading tip of suture wire 416 will also be set at the angle  $\theta$ .

Please replace the paragraph beginning on page 36, line 20 with the following amended paragraph:

In general, when considered solely from the standpoint of tissue penetration, it is typically desirable that the angle  $\theta$  be as small as possible, in order that the suture wire have the sharpest possible tip to facilitate tissue penetration. At the same time, however, it must also be appreciated that the leading tip of suture wire 416 must traverse the substantial curvature of third channel 230 and, if the angle  $\theta$  is too small, the sharp leading tip of the suture wire will strike the wall of third channel 230 (FIG. 3634) and thereby become damaged and/or blunted. On the other hand, if the angle  $\theta$  is increased, the heel of the tip will engage the wall of third channel 230 (FIG. 3735), thereby leaving the sharp tip of the suture wire undamaged. Thus, it is generally preferred that the angle  $\theta$  be set so that the leading tip of suture wire 416 be formed as sharp as possible while still being able to traverse the curvature of third channel 230 without damage.